DIAMOND SYSTEMS CORPORATION

EMERALD-MM-8PLUS

HIGH PERFORMANCE PC/104-*PLUS* MULTIPROTOCOL 8 PORT SERIAL IO

- 8 serial ports with up to 1.8432Mbps data rates

- 16C654 UARTS with 64-byte FIFOs

- Configurable for RS-232/RS-422/RS-485 protocols or simple TTL level operation

- 8 programmable digital I/O lines

- PC/104-*Plus* form factor

DESCRIPTION

Emerald-MM-8Plus is a high performance eight port multi-protocol serial communications PC/104-Plus module. Supporting baud rates up to 921.6K bps in RS-232 mode or 1.8432Mbps in RS422 or RS485 mode, each port can be individually selected for RS-232, RS-422, RS-485 or TTL level operation. Both local-echo and non-local-echo modes are supported for RS-485. Protocol selection is achieved via a jumper block for each of the eight ports. Line termination for RS-422/485 modes is also jumper-selectable.

Emerald-MM-8Plus is based on the Exar 17D158 octal UART IC. which contains 8 identical sets of 16C550 registers, one for each port, and is compatible with the standard PC serial port. Each port contains 64-byte transmit and receive FIFOs to support the high-speed data rates.

Emerald-MM-8Plus also offers 8 convenient independently programmable digital I/O lines. Emerald-MM-8Plus offers a 16-bit programmable counter / timer with a configurable clock source.

The board requires only a +5V input and operates from -40°C to +85°C.

ORDERING INFORMATION

Part No.	Description
EMM-8PLUS-XT	8 RS-232/422/485 serial ports

SPECIFICATIONS

No. of ports	8
Protocols	RS-232, RS-422, RS-485 (local / no echo)
Protocol Config.	Jumpers
Software Config.	Plug and Play
Max baud rate	1.8432Mbps
Comm params	5,6,7 or 8 data bits; even, odd or no parity
Short protection	Continuous, all outputs
Digital I/O	8, individually programmable
Dimensions	3.55" x 3.775"
Power Supply	+5VDC ±10%, 160mA
Operating Temp	-40°C to +85°C Extended
Weight	3.1oz (87.9g)
RoHS	Compliant
RS-232 Specifications	
Input impedance	3KΩ minimum
Input voltage swing	±30V maximum
Output voltage swing	±5V min, ±7V typical
RS-422, RS-485 Specifications	
Diff. threshold	-0.2V min, +0.2V max input
Input impedance	12KΩ min
Input current	+1.0µA max (VIN=12V) -0.8µA max (VIN=-7V)
Diff. output voltage	2.0V min (R_L=50Ω)
Diff. output voltage symmetry	0.2V max
Termination	Jumper-selectable 120Ω
Digital I/O Specifications	
Input voltage	Logic 0: -0.3V min, 0.8V max Logic 1: 2.0V min, 5.3V max
Output voltage	Logic 0: 0.0V min, 0.4V max Logic 1: 3.7V min, 5.0V max
Output current	0: 6mA max; 1: -4mA max